An Excerpt from the Nebraska GIS Strategic Plan Update, "Building a Spatial Data Infrastructure for Nebraska - September 2000"

INITIATIVE 5 — DATA SHARING AND DISTRIBUTION. *Develop structures, standards, and processes that facilitate easy access to, integration, and usability of publicly available geospatial data.*

A key component of any coordinated GIS development strategy must be the development and maintenance of mechanisms to facilitate the sharing of commonly needed geospatial data. There are several essential elements to such a data sharing strategy. These include the easy ability to discover the existence of data and how it is accessed. The documentation of the data to facilitate its proper use is another essential element, as is the establishment and wide implement of data standards to facilitate data integration. Geospatial data users and types of data are diverse and data sharing strategies must address this diversity of users and needed data (natural resources, demographics, land records, transportation, utilities, city/regional/state/federal, etc.) Potential projects under this initiative include:

METADATA DEVELOPMENT

Initiate an on-going, active program to encourage and assist public agencies to document their geospatial databases with standardized metadata. Metadata program would include policy formation, outreach, periodic workshops, and technical assistance in creating metadata.

Why it is a priority. As noted before, a core set of framework geospatial databases provides the foundation for the Nebraska Spatial Data Infrastructure. Another key element in that spatial data infrastructure is the documentation of those core geospatial databases, and other databases, with standardized metadata. Metadata is *data about data.* Metadata documents how the data was collected or derived, what the different data codes and values mean, when the data was collected, where the data is available, and in the case of geospatial data, where the data was collected from and what spatial references were used.

Metadata is the key to facilitating data sharing and exchange. If someone gets a geospatial dataset from someone else it is difficult to determine the appropriate use of that data if it is not documented. Likewise, when there is a substantial public investment in the development of a database, the parallel development of metadata is important to preserve the public investment in that data. Without adequate metadata documentation, when the key staff members who originally developed a given database leave the organization, it is sometimes difficult to justify continuing to use that database. Without adequate documentation to explain how database figures or coding were derived it is difficult to defend policy or regulatory decisions based on that data. Standardized metadata also provides the basis for potential users to find available geospatial data through geospatial database search tools that have been developed around metadata standards.

Where we are now. National metadata standards for geospatial databases have been developed by the Federal Geographic Data Committee (FGDC) and adopted by the Nebraska GIS Steering Committee. In 1996 the Nebraska Library Commission, in cooperation with the Nebraska GIS Steering Committee, received a grant from the FGDC

to train Nebraskans in the use of the metadata standards, to document several key geospatial databases, and to develop an online geospatial data clearinghouse. As a result of that grant the GIS Steering Committee organized a metadata training session, and several state agencies used the metadata standards to document one or more of their geospatial databases.

Since that time, resources have not been available to encourage and assist agencies with an on-going effort to document geospatial databases with standardized metadata. Informal surveys confirm that there exists a considerable quantity of public geospatial data for which standardized metadata documentation has not been developed.

Where are we going. To preserve the substantial public's investment in geospatial data, it is important that data is documented with standardized metadata. At its March 2000 meeting, the GIS Steering Committee endorsed the following policy statement related to metadata development and voted to refer it to the NITC Technical Standards Committee.

> *"To preserve the public's investment in geospatial databases and to facilitate data sharing, public agencies should document new geospatial data it collects or produces, either directly or indirectly, with metadata compliant with the Federal Geographic Data Committee (FGDC) Content Standards for Digital Geospatial Metadata (data describing the data). Systematic efforts should also be made to develop metadata for existing legacy geospatial data, as time and resources allow."*

How we will get there. By June 2001, the GIS Steering Committee will work with the NITC Technical Panel to encourage the formal adoption of a metadata policy as part of the Nebraska's Information Technology standards.

While the formal adoption of a metadata standard will be helpful, it is very likely that additional action and resources will be needed to seriously address the intent of the policy statement adopted by the GIS Steering Committee. Unfortunately, the development of metadata is frequently seen as a tedious task that can be deferred by the busy geospatial specialists who are already knowledgeable about the data and therefore do not personally need the metadata. Successful metadata programs in other states frequently rely upon staff resources to actively work with agencies, on an on-going basis, to encourage and facilitate metadata development. These programs also frequently have a high visibility geospatial data clearinghouse, which serve to showcase an agency's geospatial data through the metadata they have developed. As part of proposed policy discussions, over the next year, related to strengthening coordinating capacity of the GIS Steering Committee, consideration should be given to providing some resources to facilitate metadata development. These resources could possibly be associated with an education/outreach program or the geospatial data clearinghouse project discussed below. As an example of metadata development costs, DNR estimates that to support its aggressive program to maintain current metadata for its agency developed data, it will allocate from existing resources approximately $25,000 per year for FY 2001-2002.

GEOSPATIAL DATA CLEARINGHOUSE

Integrate and build upon existing agency geospatial data Internet listings and clearinghouses to develop a high-profile clearinghouse for locating and accessing Nebraska-related geospatial data.

Why it is a priority. Most GIS experts would suggest that 70 to 80% of GIS implementation costs are commonly related to geospatial data development or acquisition. One of the surest ways to reduce the level of investment required for geospatial data development is to locate existing geospatial datasets, developed by someone else that will meet some or all of your data needs. This is idea behind both the joint development of commonly needed framework geospatial databases and geospatial data clearinghouses.

Geospatial data clearinghouses are another key component of the evolving spatial data infrastructure. Data clearinghouses are intended to provide a systematic approach for cataloging and locating available geospatial data for a particular area or region. There is an evolving national network of these compatible clearinghouses. The information foundation for these data clearinghouses is the standardized metadata discussed in the proposed metadata project above. The clearinghouse allows a geospatial data user to go online and search for available geospatial data for a given geographic area and data theme of his/her particular interest. If available, the metadata will allow for either a direct link to the dataset, or provide information on how the user might get access to the data.

Where we are now. With the support of the FGDC grant discussed in the above metadata project, the GIS Steering Committee established in 1997 a Nebraska Geospatial Data Clearinghouse, which cataloged geospatial data from several state agencies. This Nebraska Geospatial Data Clearinghouse is currently hosted by Nebraska Online. At about the same time, the Nebraska Natural Resources Commission (now DNR) developed a similar geospatial clearinghouse, which cataloged the databases available through their Natural Resources Databank.

The original intent in creating the Nebraska Geospatial Data Clearinghouse was to provide the user community with a one-stop access point to search for available geospatial data related to the Nebraska area. The FGDC grant supported initial metadata training and development and the establishment of the geospatial data clearinghouse. Since the completion of the FGDC grant, there have been very limited resources available to maintain and promote this effort. As a result, few new databases have been added to the Nebraska Geospatial Data Clearinghouse catalog and it has assumed a rather low profile in the GIS user community. Because of its lack of resources, its low profile and the its lack of a reasonably comprehensive listing of available Nebraska geospatial databases, the Clearinghouse is currently limited in its ability to adequately perform its originally intended function.

Where are we going. The establishment and maintenance of a Nebraska clearinghouse for locating available geospatial data related to the geographic area of Nebraska remains a key component of the development of a Nebraska Spatial Data Infrastructure. If the GIS user community is to cooperate in the development and sharing of geospatial data, it is necessary to facilitate their locating and accessing available data. The tools incorporated within the Geospatial Data Clearinghouse were specifically designed with that intent. The shortcomings of the current Nebraska Geospatial Data Clearinghouse are not in the tools, but in the resources available to encourage the development of standardized metadata and

to promote and maintain the Clearinghouse. To more fully realize the important role of the Nebraska Geospatial Data Clearinghouse it is necessary to explore avenues to provide the necessary resources required to support its operation.

How we will get there. A subcommittee of the GIS Steering Committee should be convened to explore avenues for supporting a reasonably comprehensive Nebraska Geospatial Data Clearinghouse. Among the options that need to be considered are: finding additional resources to support its current configuration; merging the existing Nebraska Geospatial Data Clearinghouse with the DNR Databank Clearinghouse; moving the Nebraska Clearinghouse to another institutional base that can help provide the promotion and maintenance resources required. In assessing all of these options, it is important to bear in mind that the Clearinghouse operates on a foundation of metadata and that a successful Clearinghouse will probably require resources to assist and encourage agencies to develop standardized metadata. As with several other initiatives and projects outlined in this strategic plan, this project is also one that should probably be raised in proposed discussions with policy makers related to seeking enhanced coordination capacity for the GIS Steering Committee. Subcommittee exploration and development of recommendations should be completed by December 2001 and can be accomplished with existing resources. As an example of the costs associated with maintaining a geospatial data clearinghouse, DNR estimates that it requires approximately $10,000 per year (from existing resources) to maintain its agency-specific clearinghouse.

GEOSPATIAL DATA SHARING COOPERATIVE

Promote and facilitate geospatial data sharing among public agencies through development of a Nebraska Geospatial Data Sharing Cooperative based on a common data sharing agreement.

Why it is a priority. As governmental agencies invest increasing amounts of public resources in the development of geospatial data, there is a growing pressure from public officials to recapture some of those resources through selling that geospatial data to other entities needing similar data. While this trend can be seen at all levels of government, it is particularly noteworthy at the local government level, where agencies frequently have very limited resources due to budget lids. While understandable, this trend threatens to develop obstacles in the path of developing a shared spatial data infrastructure, based on the joint development and sharing of available geospatial data.

If the concept of a shared spatial data infrastructure is to take root and flourish in Nebraska, it is important to present policy makers with an alternative model and with workable mechanisms to realize such a model. One such mechanism is the concept of a Geospatial Data Sharing Cooperative, which is designed to encourage and facilitate data sharing among its government agency members. All members of the cooperative agree to share geospatial data among each other at the cost of duplication or less. Within the cooperative, all members use the same data sharing agreement and sign it only once. As part of the cooperative agreement, members are free to sell their data to other entities that are not members.

Where we are now. As noted above, there is a growing trend in Nebraska for individual local governments to establish unique policies related to selling geospatial data developed by that local government in an effort to recapture some of the development and maintenance costs. There have been similar discussions among policy makers within state

government about the merits and methods of pursuing cost recovery for major geospatial database development efforts such as DOQs.

On the opposite side of this trend was this year's passage by the Legislature of LB 628. LB 628 applies to all public records and allows citizens to obtain copies of public records in any form it is maintained in, including print outs and electronic data. Under this statute, a fee can be charged but it cannot exceed the actual costs of making the copies available. While it is a bit early to make final determinations about the impact of this new statute, it appears that it may apply to geospatial databases.

At its July 1999 meeting, the GIS Steering Committee reviewed the principals behind a model Geospatial Data Cooperative currently operating in New York State. The Steering Committee determined that the concept was sound and useful and a working committee was established to further research the concept and to develop a draft data sharing agreement. After an initial working committee meeting, this effort was placed on hold in early 2000, pending an assessment of the impact of the proposed LB 628. At its May 2000 meeting, the GIS Steering Committee received a briefing on the LB 628, as it was ultimately amended and passed by the Legislature. At that time the Steering Committee determined that it appeared that there was still merits in pursuing the development of a Nebraska Geospatial Data Cooperative and directed the working committee to resume its development efforts.

Where are we going. The development of a Nebraska Geospatial Data Cooperative based on the following principals.

1. Cooperative members agree to share geospatial data with other cooperative members
2. Data sharing cooperative open to all government and quasi-governmental entities
3. Within cooperative, all members use same agreement, sign it only once
4. Data shared within cooperative at cost of duplication or less
5. Option to charge commercial users up to "fair market value" for datasets
6. Option to put data into public domain
7. Data ownership maintained by original producer of dataset
8. Data owner sole source for particular dataset
9. Data errors/corrections returned to data owner for dataset revision at owner's discretion
10. Encourages partnerships with private sector for joint benefits

How we will get there. A draft Geospatial Data Cooperative Agreement will be developed by the working committee and reviewed/revised by the GIS Steering Committee by May 2001. The draft agreement will be circulated to governmental entities that are potential members for their review and feedback. The Governor's office will be briefed on the concept and consulted about the possibility of an executive order directing state agency participation. It is expected that these steps could be completed by December 2001 and could be accomplished with existing resources. Following an initial signing by GIS Steering Committee member agencies, and hopefully other state agencies, an outreach effort will be required to market the concept to other Nebraska governmental agencies.